



Arlington Memorial Bridge Repair & Reconstruction



The Arlington Memorial Bridge linking Washington, DC, and Arlington, Virginia is in a serious state of disrepair. (Photo © Peter Tomlinson, www.photosbypjt.com)

The Bridge: Symbolically connecting the North and the South, the Arlington Memorial Bridge was constructed in 1932, crossing the Potomac River between the Lincoln Memorial and Arlington House, the Robert E. Lee Memorial, and Arlington Cemetery.

The Memorial Bridge, of Neoclassical design, contains a center bascule span, or drawbridge. Counterweights are housed below the bridge's deck surface to raise and lower the center span.

This iconic bridge, placed on the National Historic Register in 1980, plays several important roles:

- It is one of only four bridges crossing the Potomac River into the District of Columbia; it carries visitors, residents, dignitaries, and employees into and out of the District on a daily basis;
- It is part of the National Highway System, carrying more than 68,000 vehicles each day;
- Thousands of pedestrians and bicyclists use the bridge both for commut-

ing and for visiting memorials and other features of the National Mall;

- The Memorial Bridge is a vital part of Washington, DC's evacuation plan

The Current Situation: The Memorial Bridge structure was listed as structurally deficient in its most recent biennial

Mega-Project* Profile: Memorial Bridge Repair

Estimated cost: \$128 to
\$244 million

853% to 1627% of NCR's
Annual Allotment

Percentage of NPS FLTP
Annual Allotment: 100%

Right: Rusting and section loss in an inside trunnion post for the north truss, left bascule leaf (NPS photo)





Top: Section loss and rusting in stringers and framing for the north sidewalk at the east bascule abutment. (NPS photo)



Bottom: Typical rusting of the steel deck grid underside in the bascule span; this photo taken at the mid-span. (NPS photo)

* Mega Projects: The NPS transportation system is supported, in part, by funds from the Federal Lands Transportation Program (FLTP). Currently, the NPS receives about \$250M/year from the FLTP. These funds are apportioned by formula among the seven NPS Regions. Most of these funds are used for "transportation asset management" – that is, to pay for the work required to keep existing assets in good condition. There are some projects, such as a major bridge repair or ship replacement, that require a much larger amount of funding than is available on an annual basis to the Region. These we call "Mega Projects." The NPS is trying to come up with a way to fund them.

inspection. This is due primarily to severe corrosion of the steel in the bascule span; some support stringers and framing are missing altogether. In the event that the bascule span fails, the center section will likely not fall into the Potomac River, but could suddenly settle, creating an abrupt 15-inch drop in the bridge's center section decking.

The bridge's sidewalks show de-lamination and spalling of the concrete surface, and displacement of the granite curbs. Aluminum structures have already been placed across sections of the bridge's sidewalks to protect pedestrians from falling into deteriorated sections.

There is also significant deterioration of the concrete in the arch spans, which will require extensive rehabilitation. Finally, there are widespread areas of patching and rutting throughout the deck surface, and recent core samples indicate that the deck concrete is rapidly deteriorating.

The condition of the Memorial Bridge is degrading rapidly. As the listed deficiencies increase, the Federal Highway Administration (FHWA) will first recommend load posting the bridge, and will eventually recommend complete closure.

Replacement and Repair: The FHWA has identified the replacement of the center bascule—as opposed to rehabilitation—as being the most cost-effective solution. The cost of replacing the bascule span alone could exceed \$35 million.

The Arlington Memorial Bridge Repair project is expected to require between two and four years of construction. The project is currently at the Environmental Compliance and Preliminary Design stage, funded through the Federal Lands Transportation Program. The total project costs are estimated at between \$128 and \$244 million.

A rehabilitated Memorial Bridge could provide a safe, long-term entrance into our Nation's Capital. But corrective measures must be taken now, to prevent the risk of even more serious and costly problems in the near future.